



SEPTEMBER 2008

NERG Inc.
PO Box 270
Greensborough
Victoria 3088
news@nerg.asn.au

WHAT'S ON IN SEPTEMBER

Paul McMahon VK3DIP will be demonstrating his YAGICAD antenna design software at the September meeting and show how to construct Yagi antennas. You may have seen Paul's article in this month's AR magazine on the same subject. YAGICAD combines several techniques to calculate the element lengths and spacings for beam antennas and can optimise these further by using a genetic algorithm. This Windows program can also plot directional patterns and help design matching networks for the designed antenna.

If there is sufficient interest then we'll discuss running a NERG antenna construction night in the near future.

YAGICAD is downloadable from the software section on the NERG web site at: www.nerg.asn.au

73, Mark Harrison, VK3BYY, NERG NEWS Editor

NEXT MEETING: The following monthly meeting is scheduled for **Thursday 9th October 2008**, starting 7:45pm at the Briar Hill Community Hall, 126 Mountain View Rd, Briar Hill, Melways 21 C3.

REMINDER – MEMBERSHIP FEES NOW DUE !

Just a quick reminder that NERG memberships were due last month. If you missed the chance to re-join at the AGM then you can pay in person at the regular meetings or send it in the post to: NERG Treasurer, PO box 270, Greensborough, Victoria, 3088.

Full member: \$30, Family: \$40, Concession: \$20

IN CASE YOU MISSED IT...

Last month Steve Reining VK3JSR gave a rundown on the VK3RHF 4-band repeater system. This unique four way repeater consists of several 10m, 6m, 70cm and 23cm repeaters that are linked together. More about the workings of VK3RHF later... Thanks also go to Peter VK3TBN for arranging Steve's presentation and slide show. Following Steve's talk a hat (TBN's hat I think!) was passed around resulting in raising \$171 for VK3RHF. Steve was most grateful and sent a message of thanks to all contributors.

August was also the NERG Annual General Meeting. A full report by our Secretary is in this edition. The evening wrapped up with the traditional NERG birthday party supper.

THE NEXT MEETING

Stephen VK3SN has kindly offered to talk about operating QRP from snow caves and igloos (dealing with frozen dipoles, cold batteries, disappearing solar panels, trouble shooting broken antenna tuners etc.). Steve has heaps of interesting photos to share and will show the non-radio associated gear used too - GPS, special 'back-country' skis, gortex booties, space blankets, fuel stoves, advanced first aid kit, EPIRB, etc. Don't miss the 9th October meeting!

NERG COFFEE SHOP NIGHT

There are plans to run a Yagi construction night on one of the coffee shop nights later this year – stay tuned for more details.

Drop in on the coffee shop night and enjoy a cup of tea or coffee while joining the wide ranging discussions, or perhaps get some advice on your current projects, or play with the radios.

The next coffee shop night will be held at the NERG hall at **8pm September 25th 2008 (the fourth Thursday)**.

NERG NEWS

Incorporated 1985 in Victoria, Australia
Reg No A0006776V - <http://nerg.asn.au>
Affiliated with the Wireless Institute of Australia

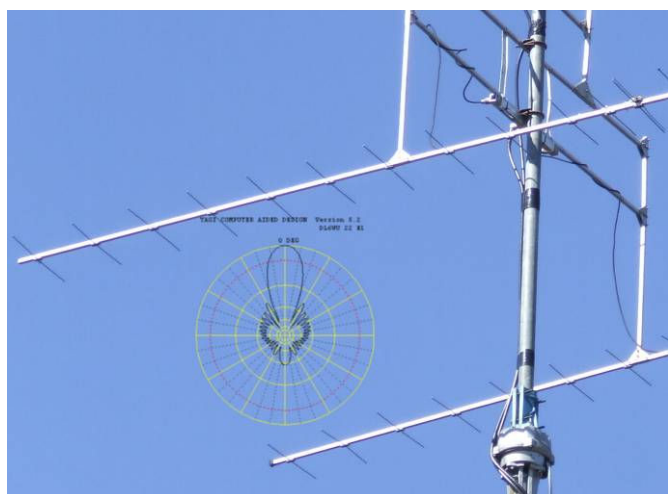
NERG Meeting:

7:45pm

11th September 2008

Paul McMahon VK3DIP

YAGI antenna design and construction with YAGICAD



Next Coffee Shop Night:

Thursday 25th September

THE GAINFULLY UNEMPLOYED GROUP TUESDAY 23RD SEPTEMBER

August was a good month for the group, as we had a full house at Dave and Carole's. Those present were VK3EMW Gerhard, VK3FM Ernie, VK3OW Ewan, VK3XIJ Ian, VK3VT Greg, VK3KMM George and myself, VK3KE Jim. It is often impossible to predict the next topics of in depth discussion but wherever the conversation roamed the opinions were well worth listening to. Gerhard was welcomed back from Germany and it was good have him with us again after several months absence. The supply food was endless and I know I really enjoyed the mini pizza and there was much to suite all tastes and desires. Many thanks to Carole and Dave for having us in their home. The next meeting will take place on Tuesday 23rd September at the home of Greg VK3VT, and Denise.

Please advise if you plan on attending the next meeting.
Cheers, Jim, VK3KE

Listen out on the NERG chat channel of 146.575 MHz for the gainfully unemployed and their latest rare DX spots.

THE 2008 NERG AGM

The AGM for NERG was held on 14th August at the Club rooms together with a talk by Steve VK3JSR on the workings of the VK3RHF repeater system. A very good turn out of members enjoyed the night's activities.

The results of the election of office bearers for the ensuing year resulted in the following members elected. President Greg Williams VK3VT, Secretary John Weir VK3XD, Treasurer Marg Baxter VK3VOJ, and committee members Mark Harrison VK3BYY (Repeaters and Newsletter Editor), David Aston VK3THY, Don Haslam VK3KDT, Betsy King VK3HBK, with late nominations from the floor resulting in Jim Baxter VK3KE (Assistant Treasurer) and Peter Cosway VK3DU being added to the list. John Kent VK3BIZ stepped down after several years on the committee to pursue academic endeavours. Marg Baxter presented the Financial Report which was duly accepted by a show of hands from all present.

A well earned presentation was made to Steve Earp VK3JSE in appreciation of his substantial donation to the Club funds. An MFJ Antenna analyser purchased with these funds and suitably engraved with acknowledgement to Steve for his generous act was on show on the night.



President Greg Williams VK3GG presents Steve Earp VK3JSE (left) with certificate of appreciation for his generous donation towards equipment and facilities at the NERG



John Weir VK3XD presenting certificate of appreciation to Leigh Doville, Manager of Margherita's Pizzas.

Although not present at the meeting, Leigh Doville of Margherita Pizza was presented with his Certificate of Appreciation at his business location when we picked up the supper pizzas, and we thanked him on behalf of the Club for his continued support in providing the supper for our main meeting night each month.

Unfortunately Mark VK3XXX/XB was not present on the night to receive his Certificate in appreciation of his generous donation to club funds, however he was present at the following Coffee night and a suitable presentation was performed then.



Mark VK3XB receiving his certificate from John VK3XD

The presentation by Steve VK3JSR, suitably supported by Peter VK3TBN, was greatly appreciated by the members and resulted in numerous questions from the audience and our appreciation of the presentation was shown by acclamation. In addition to this Steve donated to the Club two portable telescopic masts for use by the club and again this was greatly appreciated by the Club and members. The NERG birthday party celebrations followed with a cutting of the cake and members partaking of the various food, tea and coffee donated on the night. A good night was had by all and much conversation took place during the evening.

John Weir VK3XD
NERG Secretary

RUMOURS

George has gone digital! He now frequents the repeater in his home town in Italy thanks to the wonders of Echolink and the Internet.

Rumour has it that the "Where the heck is George" certificate can be claimed by anyone making an Echolink contact with George – as usual the challenge is to get George to pick up the microphone!

SHEPPARTON HAMFEST 14TH SEPT.

A poster for 'HAMFEST 2008' on '14th September'. The text on the poster includes: 'Venue: St Augustine's Hall, Orr St Shepparton', 'For directions call on VK3RGV 146.650Mhz', 'Doors open for traders at 8am and public at 10am', 'The day is well catered for with good healthy food.', and contact information: 'Daryl VK3KL Ph 03 58711444 email: churr@netspace.net.au'. The poster has a purple border and a background image of a ham.

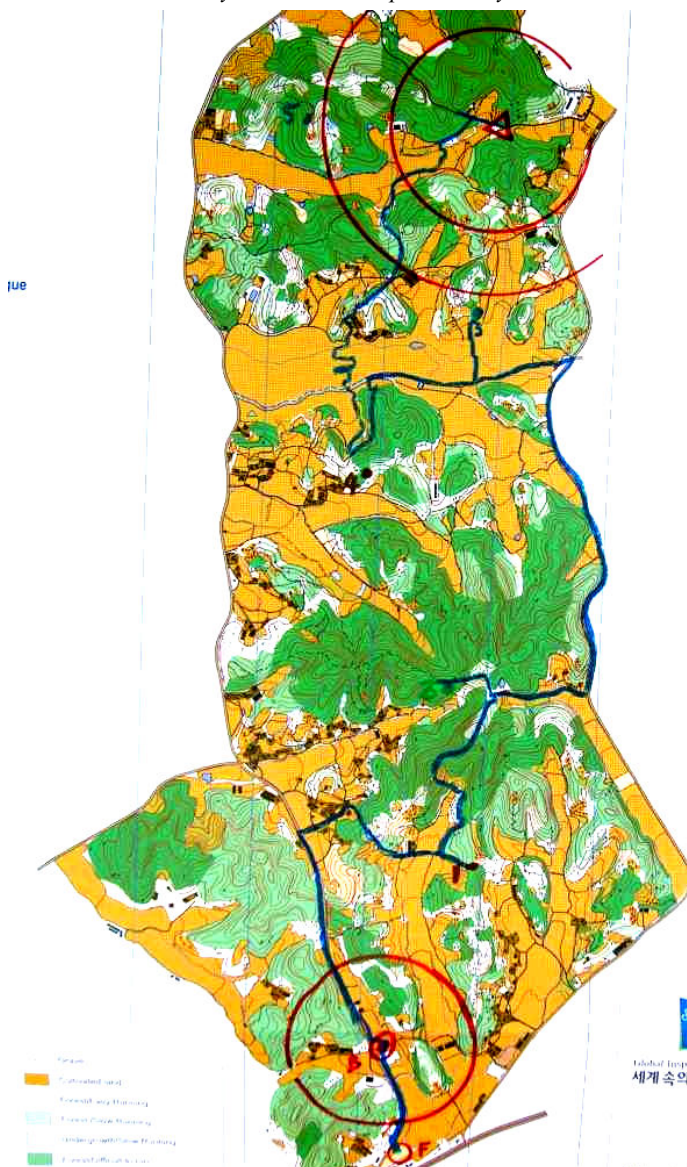
Orr Street is parallel and two streets to the East of the main Goulburn Valley Highway, between Nixon St and Balaclava Rd.

ARDF NEWS

News has been received from Bruce VK3TJN and Bryan VK3YNG who are currently competing in the 14th World ARDF Championships. 33 countries are participating at Hwaseong, Korea.



This photo shows the kind of terrain for the ARDF event and the country club where competitors stayed.



One of the maps – note yellow parts are flat rice fields, and dark green areas are described as 'Forest – very difficult to run'. The blue line shows the path Bruce took to find the transmitters.

The event runs under the IARU rules with several 2m and 80m transmitters to be found.

More stories and photos from the Australian team can be found on the ARDF web site: www.ardf.org.au

The official championships web site is: <http://www.2008ardf.org/>

In other ARDF news, the September ARDF event has been cancelled. The next scheduled event is on Friday 17 October.

VK3RHF – THE 4-BAND REPEATER

VK3RHF has the standing of one of the best repeater systems in Australia. It is a superb radio system for VK3 amateurs and when the 10m and 6m bands open VK3's can talk to the world. Remarkably, despite its complexity VK3RHF is no more difficult to use than a regular repeater.

This repeater started life as Australia's first operational 10m FM repeater. Since being licensed in 1987, VK3RHF has undergone several rebuilds and site relocations. It's now owned and operated by Steve VK3JSR who has developed VK3RHF with the support of many in the Victorian amateur community and the local communications industry. It is now a complex network of receiver and transmitter sites acting as a single 4-band repeater.

The repeater services amateurs around Melbourne and country areas with 70cm and 23cm inputs. Country areas beyond Melbourne are serviced by the 6m and 10m inputs. When the 6m band opens, DX contacts with VK4 and Asia are frequently possible. The 10m band extends the range to just about anywhere in the world when conditions are right.

Because all the bands are cross-linked, it's possible to make very long distance contacts whilst, say, sitting on a train with a 70cm handheld transceiver or driving to work.

VK3RHF consists of the following sites and frequencies:

29.640 MHz output - 29.540 input with 3 Voting receivers at Olinda, Macedon and Yea.

53.625 output - 52.625 input with 2 voting receivers at Olinda and Macedon. Requires 88.5 Hz CTCSS to access the Olinda Receiver. Macedon does not require CTCSS.

438.750 output - 433.750 input with 2 Voting Receivers at Olinda and Macedon. Access with 88.5Hz CTCSS.

1273.4 output - 1293.4 input. Both are at Mt Macedon.

Note CTCSS access tones are required, and that Foundation operators will have to upgrade their licences before they can legally use RHF.

WHY MULTI-BAND?

Prior to Internet linked repeaters the only way you could work DX was with a HF transceiver but that is fairly difficult and unreliable when you are mobile. By linking the four bands together, VK3RHF makes 10m and 6m DX possible to people without HF. You can now work DX with a handheld from a retirement home, or from a bicycle, or from the car during the daily commute. During the winter months these bands are relatively quiet so linking the bands together improves the likelihood of making a contact too.

WHY MULTI SITES?

The use of multiple sites solves several problems.

On 10m for instance, repeaters use receive and transmit frequencies that are only 100 kHz apart. Physically separating the transmitter and receiver by several kilometres prevents the receiver from being overloaded by the transmitter.

Fading of DX signals due to changing propagation conditions is another problem. Certain modes of propagation on the 10m band and above can be very location specific. Distant signals

can often be heard in one location whilst nothing is heard a few kilometres away. Using multiple receive sites increases the likelihood that at least one receiver hears a DX signal and can follow the signal as it moves due to changing propagation conditions. This is technique is called space diversity.

UHF repeaters also have problems. Large obstacles such as buildings and hills get in the path between the repeater and mobile or portable users. Often a high power repeater can be heard by the user, but they can't get in to the repeater because of their lower transmitter power. Multiple reflections from various objects can also cause indirect signals to cancel each other out, causing deep fading or "picket fencing" when the user is moving. The use of multiple receiver sites improves both situations by increasing the likelihood of at least one receiver hearing a good signal.

VOTING? INSIDE A RADIO?

"Voting" in the two way radio industry is a technique used to select the best signal from several receivers and use it as the audio input to a repeater. Some voting systems measure all the signal strengths and select the strongest. RHF however uses a 'Noise Voter' system that compares the background noise on each audio signal from the receivers and chooses the cleanest signal. This is done because it's not easy to convey signal strength measurements across a radio link from a remote receiver. It's quite easy though to run all the audio from remote receivers into a voting system at a central control site.

THE BIG AMP

With all these 10m remote receivers, users need to be able to hear the 10m repeater from far and wide. A decent transmitter is required. After several 10m FM transmitters burnt out from running non-stop during the summer DX season, ICOM helped out with a seriously big amplifier. The IC-PWI can now idle along all day putting out 100 watts at 100% duty cycle and is heard from Ballarat, Traralgon, Yea, and Mt Buffalo.

THE FAT CONTROLLER

No, this isn't one of our NERG members! The heart of the VK3RHF system is a RC850 its Advanced Repeater Control System from Advanced Computer Controls. It's over 20 years old but still controls the network and produces voice IDs.

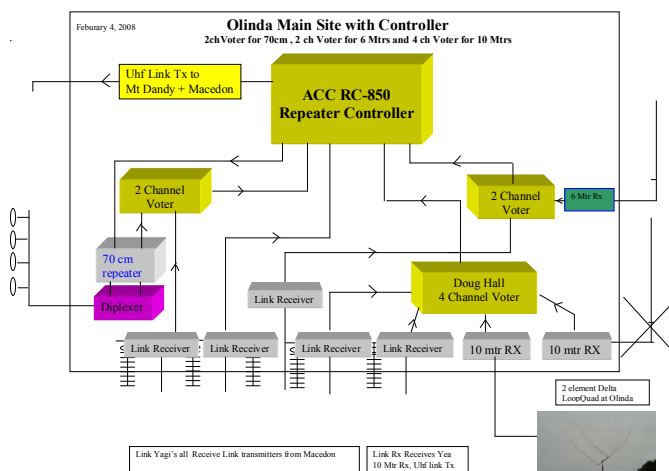


THE SITES

Most of the gear is housed at commercial communications sites, mostly through the generosity of Steve's employers and other's in the industry. As with most communications infrastructure these days, the sites have high security and strict industrial safety regulations. This means commercial jobs take priority and work on RHF, especially tower work, take place after the paying work is done. Amateurs need to be patient when things break.

VK3RHF now has a 3rd 10 meter voting receiver near Yea (approx 480 meters above sea level). This gives the 10 meter repeater BIGGER ears for DX and better coverage North of the Great Divide. Since there is no power at this site, a recent fund raiser was used to purchase an 80 watt solar panel and a regulator, together with a bank of donated 12 volt batteries for

storage. There are also plans to extend coverage from Mt Baw Baw and Mt Cottaral.



The system diagram for the Olinda sites is too complex to show here but does indicate just how complex it is!

SPONSORS

Melbourne amateurs love RHF and use it day in and day out wether the bands are open or closed. Over the years, many amateurs have donated both time and money to Steve's project. It's never enough and more often than not, Steve has brought, fixed, and sold second hand equipment, or sold his own to fund the repeater.

For more on VK3RHF, or to make a donation, look up the web site at: vk3rhf.net

2008 AMATEUR RADIO EVENTS

H = Hamfest, A = ARDF/RadiO/Foxhunt, C = Contest, M= Meeting, S = Special event, G = General, W = WICEN

FoxHunt = Friday night or weekend daylight mobile hunt.
RadiO = a simplified direction finding competition usually held at an orienteering event. **BushO** = Bush orienteering event. Check the ARDF web site for updates and further details at: www.ardf.org.au

September 2008

- A Sep 1-7 14th World ARDF Championships, Korea
- G Sep 7 Fathers Day (request more radios!)
- H Sep 14 Shepparton Hamfest. St Augustine's Hall, Orr Street, Shepparton. www.sadarc.org
- G Sep 20 - Oct 5 Victorian School Holidays
- C Sep 26-27 CQWW RTTY DX contest (international) www.cq-amateur-radio.com

October 2008

- G Oct 5 Daylight Savings starts (subject to change)
- C Oct -- Oceania DX contest (formerly VK/ZL contest) 24hr, Single/Multi/ReceiveOnly,... Phone & CW weekend dates to be announced. WIA/NZART www.oceaniadxcontest.com
- M Oct 18-19 51st Jamboree On The Air (JOTA)
- W Oct 18-19 Was to be Rally of Melbourne car rally but has been cancelled.
- H Oct 26 BARG Hamvention at the Ballarat Exhibition Centre at The Great Southern Woolshed, on the Western Freeway Ballarat, Doors open 10am. Further information: vk3bml@barg.org.au
- C Oct 25-26 CQ-World-Wide DX / SSB (international) www.cq-amateur-radio.com

November 2008

- G Nov 4 Melbourne Cup holiday (metro only)
- A Nov 15 Night ARDF event at Smiths Reef + Bush-O

- C Nov 15-16 Spring VHF-UHF Field Day, 24 hr (WIA)
0100 UTC Sat to 0100 UTC Sun.
6hr/24hr, Single/Multi/Home
www.wia.org.au/members/contests/vhfuhf
- G Nov 22 Banyule's Manna Gum Festival,
Greensborough
- C Nov 24-25 CQWW DX / CW contest (international)
www.cq-amateur-radio.com

December 2008

- G Dec 20 Summer School Holidays start

- C Dec 26 Ross Hull Memorial VHF-UHF contest starts
www.wia.org.au/members/contests/rosshull

January 2009

- C Jan -- Summer VHF-UHF Field Day, (WIA), 0100
UTC Sat to 0100 UTC Sun. on either second or
third weekend, yet to be announced.
www.wia.org.au/members/contests/vhfuhf

NOTE: please confirm details closer to the posted dates!
UTC dates may be used for International events.
Dates gathered from WIA, AR Vic, ARRL, various clubs, VK Contest
Club www.vkcc.com, and Banyule City calendars.



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Margherita proudly sponsors the delicious pizzas enjoyed at the NERG meeting nights

The NERG Inc. RegNo A0006776V <http://nerg.asn.au>

The North Eastern Radio Group, Inc. is an amateur radio club devoted to encouraging members and others to enjoy the hobby of amateur radio. It tries not to hang on ceremony and endless reporting but rather participate in the fun aspects of this fascinating hobby.

Membership Fees (due in August):

Full: \$30 Family: \$40 Concession: \$20

Send to: NERG Treasurer, PO box 270, Greensborough, Vic., 3088

Committee

President	Greg Williams	VK3VT	9432 0563
Secretary	John Weir	VK3ZRV	9431 0667
Treasurer	Marg Baxter	VK3VOJ	9467 1253
Assistant	Jim Baxter	VK3KE	
Committee	Betsy King	VK3HBK	
	David Aston	VK3THY	0411-877-051
	Peter Cosway	VK3DU	9379 3626
	Don Haslam	VK3KDT	0409 024 597

News/Repeaters

Mark Harrison VK3BYY 9435 3043

Meetings

Main Meeting: 2nd Thursday of each month at 7.45 PM (ex Dec & Jan)

Coffee Shop nights: 4th Tuesday each month.

Briar Hill Community Hall, 126 Mountain View Road, Briar Hill
(Near Sherbourne Road intersection) Melway map ref 21-C3

Classes & Exams

NERG occasionally runs classes and exams for Amateur licences

Callsigns and Repeaters (25km North East of Melbourne)

Club call - VK3CNE <http://www.nerg.asn.au/vk3cne>

6m repeater VK3RMH FM 52.550 MHz in 53.550 MHz out

70cm rpt. VK3RMH FM 433.325 MHz in 438.325 MHz out

with 70cm IRLP node 6350, EchoLink node 140587

6m beacon VK3RMH CW 10 Watts H 50.2950 MHz

10m beacon VK3RMH CW 20 Watts V 28.2565 MHz

Packet Radio VK3CNE 2m 144.700 MHz, 1200 bps

VK3CNE-1 for mail,BBS; VK3CNE-7 for the DX Cluster. Occasionally home to the Scout Radio & Electronics Group repeater:

2m VK3RSR FM 146.375 MHz in 146.975 MHz out

NETS

NERG NETS run on 146.575 MHz FM Simplex (8.30 – 9.30 pm Thursdays).

Please join the discussions. Also used as a general Net frequency.

WEB Sites: <http://nerg.asn.au> and <http://www.qsl.net/vk3rmh>

NERG NEWS submissions and comments invited:

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email: news@nerg.asn.au



NERG

North-East Radio Group VK3CNE

NERG Incorporated 1985
BOX 270 GREENSBOROUGH VIC 3088

STAMP

Next Meeting: 7.45 pm Thursday 11th September 2008
Designing and Constructing Yagi Antennas with Paul VK3DIP

2008 CALENDAR (NERG ACTIVITIES IN BOLD TYPE)

Sept 4	NERG Net - 8:30pm 146.575 MHz FM
Sept 11	September NERG Meeting – Designing and Constructing Yagi Antennas with Paul VK3DIP
Sept 14	Shepparton Hamfest. St Augustines Hall, Orr Street, Shepparton. www.sadarc.org
Sept 18	NERG Net - 8:30pm 146.575 MHz FM
Sept 23	Gainfully Unemployed Group, 10am, please RSVP
Sept 25	NERG Coffee Shop night – also with net at 8:30pm on 146.575 MHz FM from the hall
Oct 2	NERG Net - 8:30pm 146.575 MHz FM
Oct 9	October NERG Meeting – Amateur Radio in the Snow with Steve VK3SN
Oct 16	NERG Net - 8:30pm 146.575 MHz FM
Oct 18-19	51st Jamboree On The Air (JOTA)
Oct 23	NERG Coffee Shop night – also with net at 8:30pm on 146.575 MHz FM from the hall
Oct 28	Gainfully Unemployed Group, 10am, please RSVP
Oct 30	NERG Net - 8:30pm 146.575 MHz FM
Nov 13	NERG Meeting